

#### C. 4. Catfish

In the A/P Study area, channel catfish and white catfish are taken principally in western Albemarle Sound, Chowan River, and Roanoke River in pound nets, gill nets, and catfish pots. Landings have varied, generally trending downward since the mid 1970s. Certain species of catfish, including the white catfish, black bullhead, yellow bullhead, brown bullhead, and flat bullhead, are quite tolerant of degraded water quality, especially low oxygen levels. The channel catfish and other catfish of commercial value are however, not tolerant. A decline in water quality may, therefore, result in changing species assemblages towards more tolerant species. Catfish are susceptible to red sore disease, a bacterial infection prevalent in the Albemarle Sound area during the 1970s. As with most diseases, outbreaks of red sore disease in catfish are often manifestations of stress due to poor water quality. Little biological research has been conducted on catfish in the Albemarle area (Mauney 1969; Keefe and Harriss 1981) and no cause can be stated for the apparent decline in landings.

#### C. 5. Atlantic Croaker

Atlantic croaker is one of North Carolina's most important finfish for both commercial and recreational fishermen. Some large year classes were produced during the mid and late 1970s, which provided record landings from 1976 to 1980. During this period, relatively large numbers of three- and four-year-old fish were taken. Recreational fishing in Pamlico Sound was so good, that the term "croaker boats" was used to describe the large fleets of 16-25 ft recreational fishing boats which fished in Pamlico Sound during that period, regardless of their target species. Oceanic trawl and estuarine long haul seine catches dominated landings through 1980; since 1984, oceanic gill net catches accounted for most of the Atlantic croaker harvest (Ross 1991). Pound nets also harvest considerable numbers of Atlantic croaker. Data collected from the major commercial fisheries by DMF stock assessment surveys since 1981 indicate that Atlantic croaker are "growth over-fished", i.e., that average sizes of landed individuals have become smaller (Ross 1991). Reasons for the increase from 1976 to 1980 are unknown but are probably related to favorable changes in environmental conditions in ocean spawning areas and estuarine nursery areas. Croaker spawn principally during fall, winter, and spring; extreme winter conditions may cause mortality of eggs, larvae, or early juveniles.

#### C. 6. Spot

Spot is usually one of the most abundant estuarine fishes of North Carolina and is very important to recreational fishermen, it ranked first in numbers caught recreationally from 1987 to 1989. Landings and presumably population levels fluctuate wildly. The long haul seine fishery harvests most of the spot landed in North Carolina. According to DMF stock assessment data, populations show little indications of growth over-fishing in North Carolina. Fluctuations are thought to be primarily controlled by environmental conditions or other aspects of spot's life history, such as predation.

#### C. 7. Flounder

Two species of flounder primarily support one of North Carolina's most important commercial finfish fisheries, as well as very important recreational fisheries. Summer flounder is the most commercially important species, composing approximately 56-70% of the total flounder landings in North Carolina. The oceanic trawl fishery harvests most of the summer flounder. Landings of summer flounder along the Atlantic coast were nearly constant from 1979 to 1990, when they fell nearly 60%. North Carolina landings have gradually declined since 1984, with 1990 landing the lowest since the early 1970s. Presently summer flounder appear to be over-fished.